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Appl. No. 09/610,604  
Reply to Office Action of July 26, 2006

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REMARKS

Applicants have added new claims 10 – 17 in order to alternately define the invention as disclosed in the specification. New claims 10 – 12 further require that each image group area be comprised of a plurality of contiguous pixels in both the vertical and horizontal direction. New claims 13 and 14 require that the output of the first and second charge transfer sections be substantially immediately adjacent. New claims 15 – 17 require that the remaining electric charge transfer sections do not extend the entire width of the imaging section.

Applicants respectfully request reconsideration of Examiner's rejection of claims 1, 2, 5 - 7, and 9 under 35 U.S.C. §103(a). The Examiner has rejected these claims in view of the cited references of *Ueda et al.* (U.S. Patent No. 4,837,630) and Morimoto (U.S. Patent No. 5,969,759). *Ueda* is directed to an image pickup device including an intermediate storage area including first and second vertical transfer registers for each column of the imaging array. A switch arrangement selectively transfers the charges from the image pickup section to either of the first and second vertical transfer registers disposed for each column. During a vertical blanking period, picture element signals corresponding to odd lines are read out from the image pickup section and are transferred to the first vertical transfer register in the storage region, and then picture element signals corresponding to even lines are read out from the image pickup section and are transferred to the second vertical transfer register in the storage region. During a horizontal blanking period after the vertical blanking period, the readout section independently reads out the picture element signals from the first and second vertical

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transfer registers in the storage section and into the first and second horizontal transfer registers.

Applicant's invention, on the other hand, does not include an intermediate storage section 14 between the image area 10 and the horizontal transfer registers 17/18 of *Ueda*. Furthermore, Applicant's invention does not require that the odd pixels be read out first, followed by the even pixels, as required in the *Ueda* reference. Rather, as shown in Figure 1 of Applicant's disclosure, pixel data in contiguous image area A can be directly transferred to the first horizontal transfer register 14A without passing through any additional intermediate vertical transfer section. As a result, the overall size of the device can be further reduced, and vertical-line noise can be reduced and the simplicity of the signal processing system can be increased (See page 17 of Applicant's disclosure).

Regarding the Examiner's rejection on page 3 of the last Office Action, Applicants submit that the *Ueda* reference fails to disclose a number of limitations which the Examiner asserts the reference against. First, Applicants submit that *Ueda* fails to disclose wherein the first area and the second area are disposed adjacent to each other in the horizontal direction. As clearly shown in Fig's 4B and 4C of *Ueda*, the first image group (the odd pixels of Fig. 4b) and the second image group (the even pixels of Fig. 4c) are only adjacent each other in the vertical direction.

Furthermore, the Examiner concedes that *Ueda* fails to disclose wherein all of the pixels in any one of a column of the image section is read out to only one of the first and second electric charge transfer sections. In order to compensate for this failed teaching, the Examiner has cited the *Morimoto* reference.

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Applicants note that it is unclear if the Examiner is asserting Morimoto under a separate and distinct rejection, as the Examiner has cited to Morimoto for almost every limitation in the claim, and not just the noted failed teaching of Ueda. Applicants note, however, that Morimoto fails to disclose wherein at least one of the charge transfer sections extends the entire width of the imaging section.

Applicants also contest the Examiner's 103(a) rejection in light of Morimoto. As noted above, the Examiner relies upon Morimoto under §103 for its teaching regarding the read-out of all charges in a single column to one charge transfer section. Regarding the motivation to combine the references, the Examiner has stated on page 6 of the Office Action that one of ordinary skill in the art would have found Morimoto advantageous because "it would reduce the consumption of power ... and increase the read-out speed of signal-charges from the image sensor."

Applicants submit that the Examiner's §103 rejection is insufficient for at least two reasons. First, the bodily incorporation of Morimoto's single-column read-out would render the split vertical CCD intermediate temporary storage section 16 of Ueda superfluous at the least, and would most likely render the device inoperable. More specifically, the vertical CCD section 16 of Ueda, which is formed at half the height of the imaging array 11, could not handle a read-out of all of the pixels at once.

Applicants note that the predecessor court to the Court of Appeals for the Federal Circuit has held that the "Test for obviousness is not whether features of one reference may be bodily incorporated into another reference; rather, test is whether combined teachings render claimed subject matter obvious." *In re Wood*, 599 F2d 1032, 202 USPQ 171 (1979,

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Cust & Pat App). Furthermore, on the topic of inoperable combinations, the Federal Circuit has held that “If references taken in combination would produce a ‘seemingly inoperative device,’ we have held that such references teach away from the combination and thus cannot serve as predicates for a *prima facie* case of obviousness.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir., 2001). In light of the forgoing, Applicants submit that the Examiner’s rejection must be withdrawn, and the remaining claims placed into condition for allowance.

Second, Morimoto clearly teaches away from any such combination. More specifically, the motivation to combine cited by the Examiner would be rendered inoperable and meaningless if the single-column read-out were incorporated into the Ueda device. As noted by the Examiner, Morimoto is directed to a method of reducing the consumption of power of the imaging array by reducing the power consumed by the horizontal CCD registers. (See Column 3, lines 24 – 28). As clearly shown in the Figures and described in Column 7, lines 1 – 6, this is accomplished in Morimoto by shortening the length of the horizontal CCD registers. Accordingly, Morimoto clearly teaches away from the use of horizontal CCD registers which extend the entire length of the imaging array. “We have noted elsewhere, as a “useful general rule,” that references that teach away cannot serve to create a *prima facie* case of obviousness.” *Id.* at 1354.

In light of the cited disclosures and the relevant case law, Applicants submit that one of ordinary skill in the art would not have been motivated to combine the references asserted by the Examiner.

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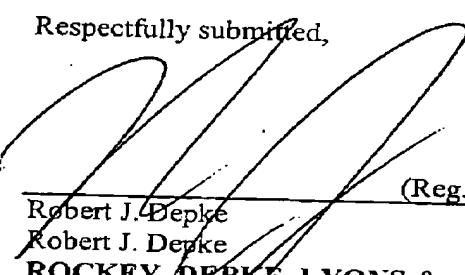
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In light of the foregoing, Applicants submit that the Examiner must withdraw the 35 U.S.C. §102(b) rejection, and place claims 1, 2, 5, and 6 in condition for allowance. Applicants respectfully submit that all claims now stand in condition for allowance.

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Respectfully submitted,

  
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